What is claimed is:

1. An optical fiber for supporting single mode transmission of a long wavelength signal, the optical fiber comprising:

a pure silica core region of diameter d;

a surrounding fluorine-doped cladding region having an outer diameter D, where $D/d > 8.5$.

2. An optical fiber as defined in claim 1 wherein the fiber further comprises a surrounding tube layer.

3. An optical fiber as defined in claim 2 wherein the surrounding tube layer comprises silica.

4. An optical fiber as defined in claim 1 where $9 < D/d < 10$.

5. A method of forming a single mode fiber for providing transmission of a long wavelength signal, the method comprising the steps of:

a) providing a glass tube;

b) using an MCVD process to deposit a plurality of layers of fluorine-doped silica on the inner wall of the glass tube, the plurality of layers selected to obtain a desired thickness D for the cladding layer;

c) depositing silica material on the inner wall of the deposited fluorine-doped silica, the amount of silica chosen to obtain a desired core diameter d; and

d) collapsing the tube to form an optical fiber preform having a core region with a diameter d and surrounding cladding layer having an outer diameter D, where $D/d > 8.5$.

6. The method as defined in claim 5 wherein prior to depositing the plurality of layers of fluorine-doped material, a relatively few layers of phosphorus and fluorine-doped silica is deposited.